Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A system for modulating an RF carrier comprising:

at least one pair of balanced modulators, wherein said modulators are identically configured with respect to control of device and component matching and circuit symmetry on a monolithic microwave integrated circuit (MMIC), each modulator including:

a lowpass filter with input connected to the RF carrier, said lowpass filter producing a first phase shifted carrier output;

a highpass filter with input connected to the RF carrier, said highpass filter producing a second phase shifted carrier output;

a data port for receiving data bit information;

a symmetrical pair of notch filters, each centered at the frequency of the RF carrier, wherein a first of said symmetrical pair of notch filters feeds said data bit information exclusive of said RF carrier to said data port; and a second of said symmetrical pair of notch filters feeds a complement of said data bit information exclusive of said RF carrier to said data port and

a switch connected to an output of said lowpass filter and connected to an output of said highpass filter, said switch configured to select and output either said first phase shifted carrier output from said lowpass filter or said second phase shifted carrier output from said highpass filter depending on a switching state, said switching state determined by said data bit information at said data port.

2. (original) The system of claim 1 wherein said lowpass filter phase shifts the RF carrier approximately -90 degrees to produce said first phase shifted carrier output.

3. (original) The system of claim 1 wherein said highpass filter phase shifts the RF carrier approximately +90 degrees to produce said second phase shifted carrier output.

4. (original) The system of claim 1 further comprising a power divider configured to split the RF carrier into two equal amplitude signals and feed the RF carrier into said lowpass filter and into said highpass filter.

5. (canceled)

6. (original) The system of claim 1 wherein said system is fabricated using MMIC.

7. (original) The system of claim 1 wherein said system is fabricated using ASIC.

8. (currently amended) A system for modulating an RF carrier comprising:

a lowpass filter with input connected to the RF carrier, said lowpass filter producing a phase shifted carrier output;

a highpass filter with input connected to the RF carrier, said highpass filter producing a phase shifted carrier output;

a first BPSK modulator with first input connected to said lowpass filter, said first BPSK modulator comprising:

a first lowpass filter with input connected to said first input, said first lowpass filter producing a first phase shifted carrier output;

a first highpass filter with input connected to said first input, said first highpass filter producing a second phase shifted carrier output;

a first symmetrical pair of notch filters centered about the RF carrier frequency and that receives a first data bit information;

a first data port for receiving [[a]] said first data bit information through said first symmetrical pair of notch filters; and

a first switch connected to an output of said first lowpass filter and connected to an output of said first highpass filter, and connected to said first symmetrical pair of notch filters via said first data port, said first switch configured to select and output either said first phase shifted carrier output or said second phase shifted carrier output depending on a first switching state, said first switching state determined by said first data bit information at said first data port;

a second BPSK modulator, identical in configuration to said first BPSK modulator, being identically configured with respect to circuit symmetry and device and component matching on a monolithic microwave integrated circuit (MMIC), with second input connected to said highpass filter, said second BPSK modulator comprising

a second lowpass filter with input connected to said second input, said second lowpass filter producing a third phase shifted carrier output;

a second highpass filter with input connected to said second input, said second highpass filter producing a fourth phase shifted carrier output;

a second symmetrical pair of notch filters centered about the RF carrier frequency and that receives a second data bit information;

a second data port for receiving said second data bit information through said second symmetrical pair of notch filters ; and

a second switch connected to an output of said second lowpass filter and connected to an output of said second highpass filter, and connected to second symmetrical pair of notch filters via said second data port,

said second switch configured to select and output either said third phase shifted carrier output or said fourth phase shifted carrier output depending on a second switching state, said second switching state determined by said second data bit information at said second data port; and

a power divider connected to an output of said first BPSK modulator and connected to an output of said second BPSK modulator, said power divider configured to produce a QPSK output vector sum of said output of said first BPSK modulator and said output of said second BPSK modulator.

9. (original) The system of claim 8 wherein said lowpass filter phase shifts the RF carrier approximately -45 degrees to produce said phase shifted carrier output.

10. (original) The system of claim 8 wherein said highpass filter phase shifts the RF carrier approximately +45 degrees to produce said phase shifted carrier output.

11. (original) The system of claim 8 wherein said first lowpass filter and said second lowpass filter phase shift the RF carrier an additional approximately -90 degrees to produce said first phase shifted carrier output and said third phase shifted carrier output, respectively.

12. (original) The system of claim 8 wherein said first highpass filter and said second highpass filter phase shift the RF carrier an additional approximately +90 degrees to produce said second phase shifted carrier output and said fourth phase shifted carrier output, respectively.

13. (original) The system of claim 8 further comprising a power divider configured to split the RF carrier into two equal amplitude signals and feed the RF carrier into said lowpass filter and into said highpass filter.

14-15. (canceled)

16. (original) The system of claim 8 wherein said system is fabricated using MMIC.

17. (original) The system of claim 8 wherein said system is fabricated using ASIC.

18. (currently amended) A QAM modulation system for modulating an RF carrier comprising:

a first QPSK modulator comprising:

a lowpass filter with input connected to the RF carrier, said lowpass filter shifting the RF carrier approximately -45 degrees;

a highpass filter with input connected to the RF carrier, said highpass filter shifting the RF carrier approximately +45 degrees;

a first BPSK modulator with first input connected to said lowpass filter, said first BPSK modulator comprising a first lowpass filter with input connected to said first input, said first lowpass filter producing a first phase shifted carrier output shifted approximately -135 degrees; a first highpass filter with input connected to said first input, said first highpass filter producing a second phase shifted carrier output shifted approximately +45 degrees; a first data port for receiving a first data bit information; and a first switch connected to an output of said first lowpass filter and connected to an output of said first highpass filter, said first switch configured to select and output either said first phase shifted carrier output or said second phase shifted carrier output depending on a first switching state, said first switching state determined by said first data bit information at said first data port, said first data bit information being fed to said first data port through a first pair of identical notch filters centered about the frequency of the RF carrier;

a second BPSK modulator identical in configuration to said first BPSK modulator being identically configured with respect to circuit symmetry on a monolithic microwave integrated circuit (MMIC), with a second input connected to said high pass filter and having a second switch configured to select and output either a third phase shifted carrier output shifted approximately -45 degrees or a fourth phase shifted carrier output shifted approximately +135 degrees depending on a second switching state, said second switching state determined by a second data bit information at a second data port, said second data bit information being fed to said second data port through a second pair of identical notch filters centered about the frequency of the RF carrier;

a second QPSK modulator; identical in configuration to said first QPSK modulator being identically configured with respect to circuit symmetry on said monolithic microwave integrated circuit (MMIC), with input connected to the RF carrier and having a third switch configured to produce a fifth phase shifted carrier output shifted approximately -135 degrees or a sixth phase shifted carrier output shifted approximately +45 degrees depending on a third switching state, said third switching state determined by a third data bit information at a third data port, said third data bit information being fed to said third data port through a third pair of identical notch filters centered about the frequency of the RF carrier; and having a fourth switch configured to produce a seventh phase shifted carrier output shifted approximately -45 degrees or an eighth phase shifted carrier output shifted approximately +135 degrees depending on a fourth switching state, said fourth switching state determined by a fourth data bit information at a fourth data port, said fourth data bit information being fed to said fourth data port through a fourth pair of identical notch filters, centered about the frequency of the RF carrier;

an attenuator with input connected to an output of said second QPSK modulator; and

a vector summer connected to an output of said first QPSK

modulator and connected to an output of said attenuator, said vector summer configured to produce a QAM output vector sum of said output of said first QPSK modulator and said output of said attenuator.

19. (currently amended) A method for modulating an RF carrier comprising steps of:

providing a first BPSK output signal including the steps of:

passing the RF carrier through a first lowpass filter, said first lowpass filter producing a first phase shifted carrier output;

passing the RF carrier through a first highpass filter, said first highpass filter producing a second phase shifted carrier output;

providing first data bit information to a first data port through first identical notch filters centered about the frequency of the RF carrier, said first notch filters being identically configured with respect to circuit symmetry on a monolithic microwave integrated circuit (MMIC); and

employing a first switch symmetrically connected to an output of said first lowpass filter and ~~connected~~ to an output of said first highpass filter to select and output either said first phase shifted carrier output from said first lowpass filter or said second phase shifted carrier output from said first highpass filter depending on a first switching state, said first switching state determined by said first data bit information provided to said first data port;

providing a second BPSK output signal balanced to the first BPSK output including the steps of:

passing the RF carrier through a second lowpass filter identically configured to said first lowpass filter with respect to circuit symmetry on said monolithic microwave integrated circuit (MMIC), said second lowpass filter producing a third phase shifted carrier output;

passing the RF carrier through a second highpass filter identically configured to said first highpass filter with respect to circuit symmetry on said monolithic microwave integrated circuit (MMIC), said highpass filter

producing a fourth phase shifted carrier output;

providing second data bit information to a second data port through a second pair of identical notch filters centered about the frequency of the RF carrier, said second pair of notch filters being identically configured with respect to circuit symmetry on said monolithic microwave integrated circuit (MMIC); and

employing a second switch symmetrically connected to an output of said second lowpass filter and to an output of said second highpass filter to select and output either said third phase shifted carrier output or said fourth phase shifted carrier output depending on a second switching state, said second switching state determined by said second data bit information provided to said second data port;

feeding the balanced BPSK output signals to a power divider to provide a bandwidth efficient QPSK modulated RF carrier output.